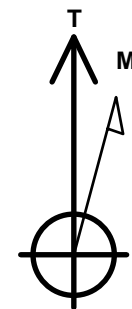
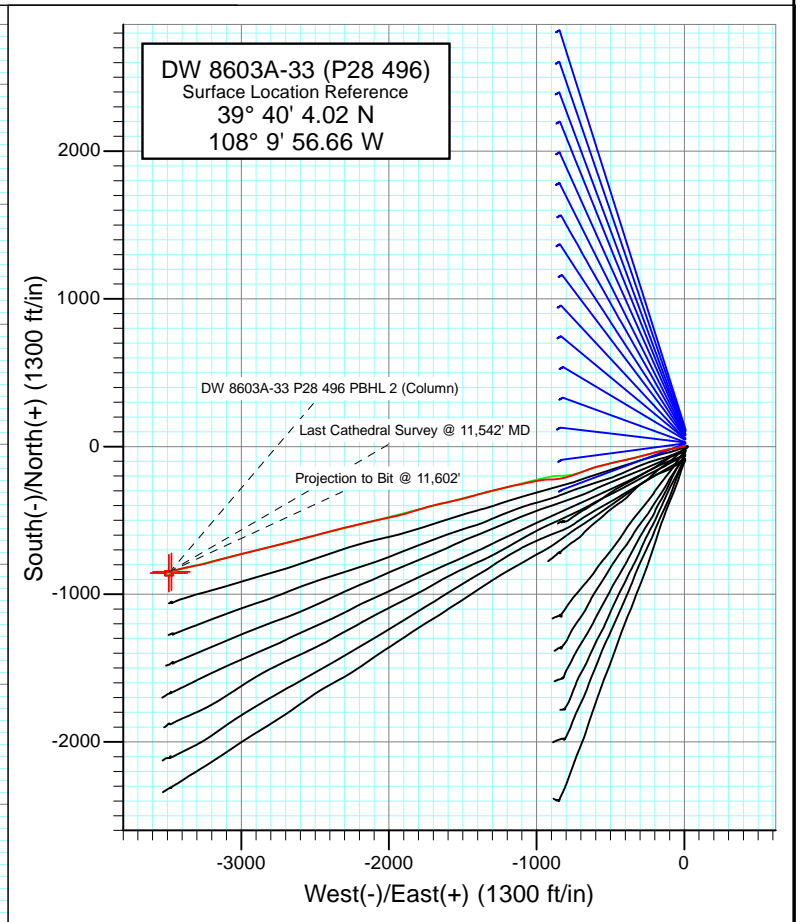
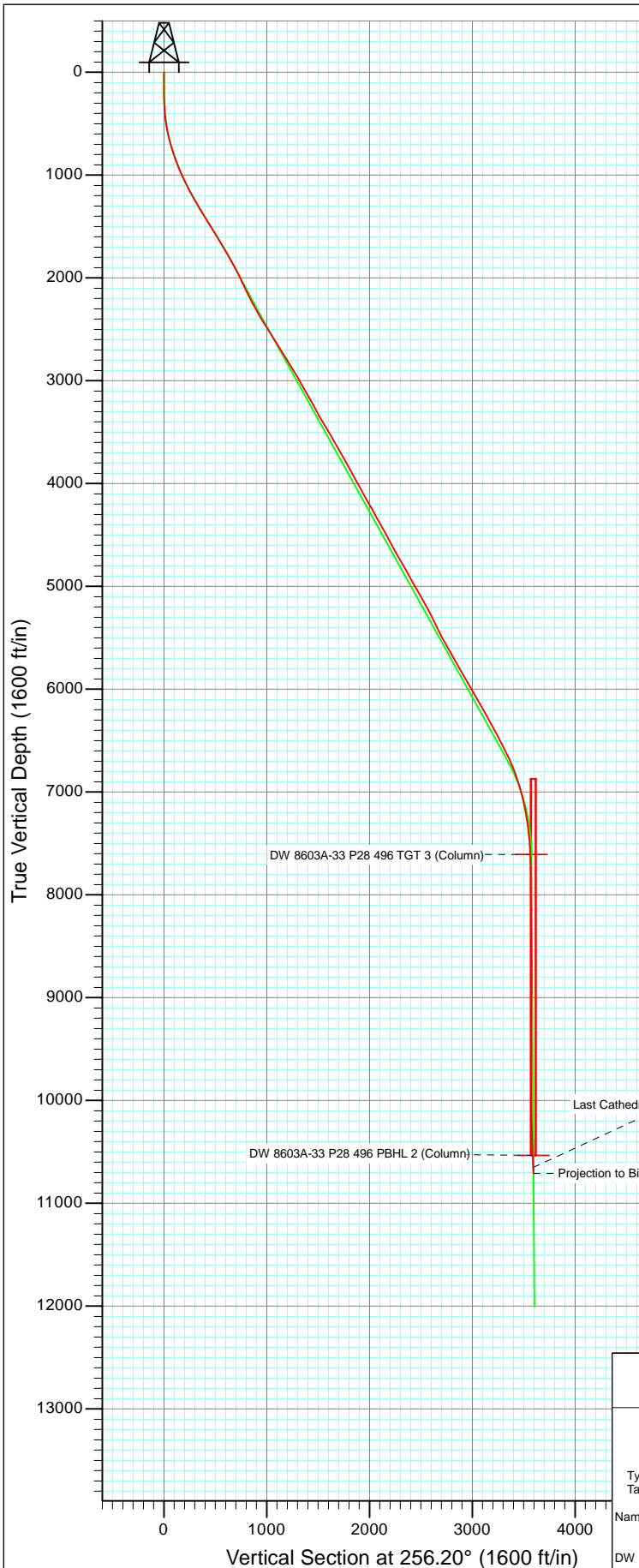




Project: Double Willow  
 Site: S28-T4S-R96W (P28 496)(column pattern)  
 Well: DW 8603A-33 (P28 496)  
 Wellbore: DD  
 Design: FINAL



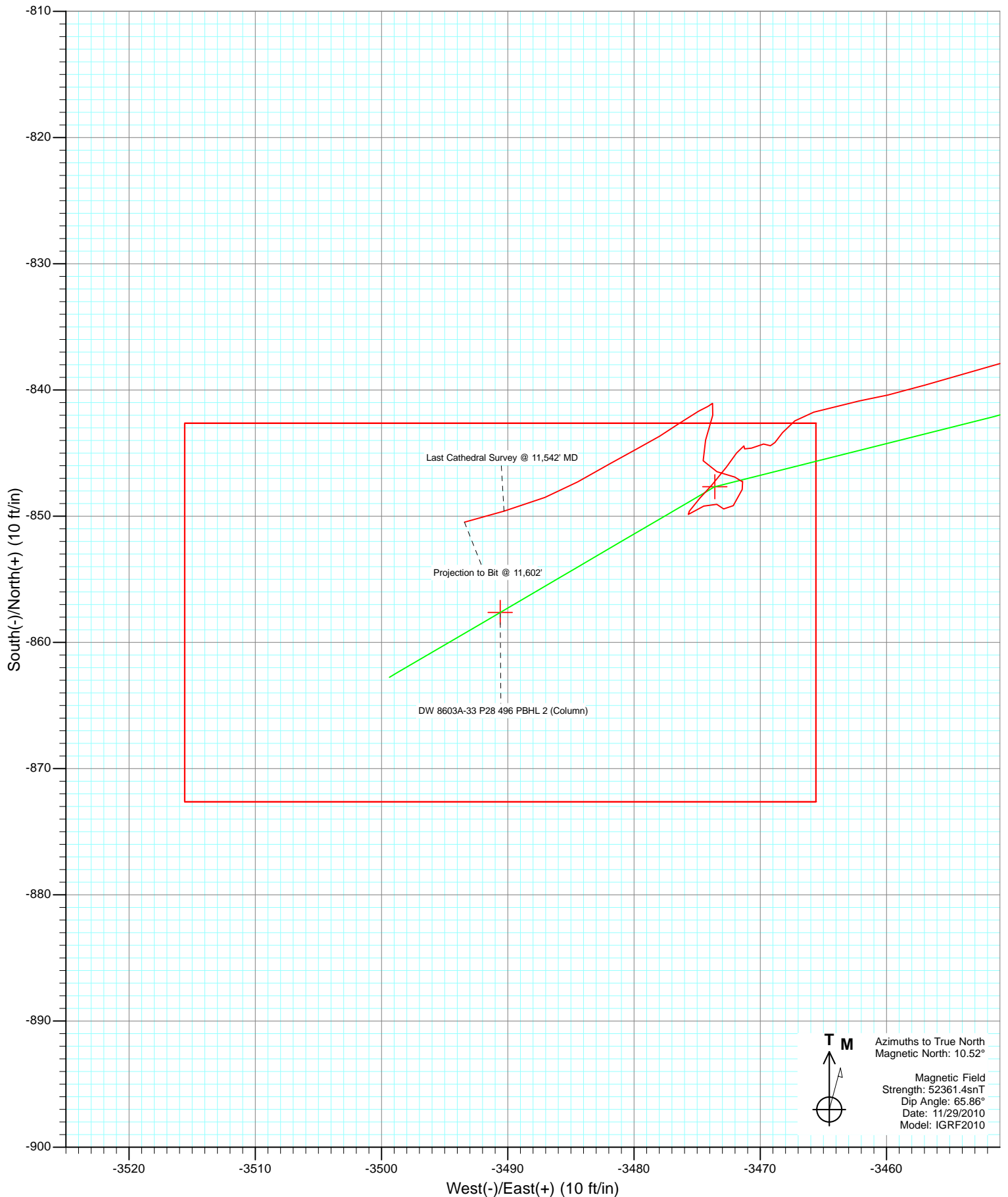
Azimuths to True North  
 Magnetic North: 10.52°

Magnetic Field  
 Strength: 52361.4snT  
 Dip Angle: 65.86°  
 Date: 11/29/2010  
 Model: IGRF2010

DD DW 8603A-33 (P28 496) 115409/110955 (SH) 115568/126855 (MH): SC						
KBE @ 7813.0ft (Patterson 308) North American Datum 1983 Well DW 8603A-33 (P28 496), True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
Target	DW 8603A-33 P28 496 PBHL (Column)	256.20	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	From TVD
DW 8603A-33 P28 496 TGT 3 (Column)	7607.3	-847.7	-3473.6	39° 39' 55.64 N	108° 10' 41.08 W	0.0
DW 8603A-33 P28 496 PBHL 2 (Column)	10513.0	-857.6	-3490.6	39° 39' 55.54 N	108° 10' 41.29 W	0.0



Project: Double Willow  
Site: S28-T4S-R96W (P28 496)(column pattern)  
Well: DW 8603A-33 (P28 496)  
Wellbore: DD  
Design: FINAL



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603A-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Well:</b>	DW 8603A-33 (P28 496)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

<b>Project</b>	Double Willow		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

<b>Site</b>	S28-T4S-R96W (P28 496)(column pattern)			
<b>Site Position:</b>		<b>Northing:</b>	1,679,243.29 ft	<b>Latitude:</b> 39° 40' 5.13 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,249,687.54 ft	<b>Longitude:</b> 108° 9' 56.55 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.68 °

<b>Well</b>	DW 8603A-33 (P28 496)			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,679,131.57 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,249,675.67 ft
<b>Position Uncertainty</b>	0.0 ft		<b>Wellhead Elevation:</b>	ft
			<b>Ground Level:</b>	7,780.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/29/2010	10.52	65.86	52,361

<b>Design</b>	DD			
<b>Audit Notes:</b>				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b> 0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	256.20

<b>Survey Program</b>	<b>Date</b>	12/20/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
169.0	2,055.0	Survey #1 (DD)	MWD	Geolink MWD
2,166.0	11,602.0	Survey #2 (DD)	MWD	Geolink MWD

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
169.0	0.50	301.40	169.0	0.4	-0.6	0.5	0.30	0.30	
199.0	0.80	252.50	199.0	0.4	-0.9	0.8	2.01	1.00	
230.0	1.20	231.70	230.0	0.1	-1.4	1.3	1.72	1.29	
260.0	1.70	254.80	260.0	-0.2	-2.1	2.1	2.53	1.67	
291.0	2.40	242.60	291.0	-0.6	-3.1	3.2	2.65	2.26	
352.0	3.90	266.70	351.9	-1.3	-6.3	6.4	3.23	2.46	
383.0	4.80	249.80	382.8	-1.8	-8.6	8.8	5.02	2.90	
414.0	5.80	263.40	413.7	-2.5	-11.3	11.6	5.16	3.23	
462.0	7.10	267.10	461.3	-2.9	-16.7	16.9	2.84	2.71	
508.0	8.70	266.40	506.9	-3.2	-23.0	23.1	3.48	3.48	
554.0	10.40	255.10	552.3	-4.5	-30.5	30.7	5.49	3.70	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603A-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Well:</b>	DW 8603A-33 (P28 496)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
600.0	12.20	258.80	597.4	-6.5	-39.3	39.7	4.22	3.91	
645.0	13.80	254.80	641.2	-8.9	-49.1	49.8	4.08	3.56	
691.0	15.60	257.60	685.7	-11.6	-60.5	61.5	4.21	3.91	
737.0	17.00	257.00	729.9	-14.5	-73.1	74.4	3.07	3.04	
783.0	18.30	260.30	773.7	-17.2	-86.7	88.3	3.57	2.83	
828.0	19.20	265.80	816.3	-18.9	-101.1	102.7	4.41	2.00	
874.0	20.20	257.70	859.6	-21.2	-116.4	118.1	6.32	2.17	
920.0	21.50	257.20	902.6	-24.7	-132.4	134.5	2.85	2.83	
966.0	22.70	259.20	945.2	-28.3	-149.3	151.7	3.08	2.61	
1,011.0	24.20	255.70	986.5	-32.2	-166.8	169.6	4.55	3.33	
1,057.0	25.20	256.10	1,028.3	-36.9	-185.4	188.9	2.20	2.17	
1,103.0	25.80	254.40	1,069.8	-41.9	-204.6	208.7	2.06	1.30	
1,149.0	26.10	254.70	1,111.2	-47.3	-224.0	228.8	0.71	0.65	
1,195.0	27.00	255.00	1,152.3	-52.6	-243.8	249.3	1.98	1.96	
1,240.0	28.80	255.80	1,192.1	-57.9	-264.2	270.4	4.09	4.00	
1,286.0	30.40	255.50	1,232.1	-63.6	-286.2	293.1	3.49	3.48	
1,332.0	31.20	255.00	1,271.6	-69.6	-309.0	316.7	1.83	1.74	
1,378.0	31.10	255.60	1,311.0	-75.6	-332.0	340.5	0.71	-0.22	
1,423.0	31.20	256.80	1,349.5	-81.2	-354.6	363.7	1.40	0.22	
1,515.0	32.00	258.40	1,427.9	-91.5	-401.7	411.9	1.26	0.87	
1,607.0	31.50	257.30	1,506.1	-101.7	-449.0	460.3	0.83	-0.54	
1,698.0	30.80	255.20	1,584.0	-112.9	-494.7	507.4	1.42	-0.77	
1,790.0	30.80	255.80	1,663.0	-124.7	-540.3	554.5	0.33	0.00	
1,881.0	30.60	255.10	1,741.2	-136.3	-585.3	600.9	0.45	-0.22	
1,973.0	29.70	251.70	1,820.8	-149.5	-629.6	647.1	2.10	-0.98	
2,055.0	28.60	250.00	1,892.4	-162.6	-667.3	686.8	1.68	-1.34	
2,166.0	26.10	249.80	1,991.0	-180.1	-715.2	737.5	2.25	-2.25	
2,211.0	25.00	248.50	2,031.6	-187.0	-733.3	756.8	2.74	-2.44	
2,257.0	26.00	250.70	2,073.1	-193.9	-751.9	776.5	2.99	2.17	
2,303.0	26.20	251.90	2,114.4	-200.4	-771.1	796.6	1.23	0.43	
2,349.0	25.90	253.40	2,155.8	-206.4	-790.3	816.8	1.57	-0.65	
2,394.0	26.50	256.40	2,196.1	-211.6	-809.5	836.6	3.23	1.33	
2,440.0	27.70	259.80	2,237.1	-215.9	-830.0	857.6	4.26	2.61	
2,532.0	30.70	266.10	2,317.4	-221.3	-874.5	902.1	4.66	3.26	
2,623.0	29.90	268.40	2,396.0	-223.5	-920.4	947.1	1.55	-0.88	
2,715.0	31.30	261.80	2,475.2	-227.6	-967.0	993.3	3.95	1.52	
2,806.0	33.70	258.20	2,551.9	-236.1	-1,015.1	1,042.1	3.39	2.64	
2,898.0	32.70	257.90	2,628.9	-246.5	-1,064.4	1,092.4	1.10	-1.09	
2,989.0	32.40	258.80	2,705.6	-256.4	-1,112.3	1,141.4	0.63	-0.33	
3,081.0	32.10	258.10	2,783.4	-266.2	-1,160.4	1,190.4	0.52	-0.33	
3,172.0	30.40	256.80	2,861.2	-276.5	-1,206.5	1,237.6	2.01	-1.87	
3,264.0	31.70	257.00	2,940.0	-287.2	-1,252.7	1,285.1	1.42	1.41	
3,355.0	28.40	255.00	3,018.8	-298.2	-1,296.9	1,330.6	3.79	-3.63	
3,446.0	29.50	256.10	3,098.4	-309.2	-1,339.6	1,374.7	1.34	1.21	
3,538.0	30.20	254.60	3,178.2	-320.8	-1,383.9	1,420.4	1.11	0.76	
3,629.0	27.70	252.30	3,257.9	-333.3	-1,426.1	1,464.4	3.01	-2.75	
3,721.0	29.50	254.70	3,338.6	-345.8	-1,468.3	1,508.4	2.32	1.96	
3,812.0	31.80	257.50	3,416.9	-356.9	-1,513.3	1,554.8	2.97	2.53	
3,904.0	30.50	258.10	3,495.6	-367.0	-1,559.9	1,602.4	1.45	-1.41	
3,995.0	29.60	255.50	3,574.4	-377.3	-1,604.2	1,647.9	1.74	-0.99	
4,087.0	30.50	257.80	3,654.1	-388.0	-1,649.0	1,694.0	1.59	0.98	
4,178.0	28.60	257.30	3,733.2	-397.6	-1,692.9	1,738.8	2.11	-2.09	
4,270.0	29.40	254.10	3,813.7	-408.7	-1,736.1	1,783.4	1.90	0.87	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603A-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Well:</b>	DW 8603A-33 (P28 496)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,361.0	28.20	253.20	3,893.4	-421.0	-1,778.1	1,827.2	1.40	-1.32	
4,453.0	29.50	252.20	3,974.0	-434.2	-1,820.5	1,871.5	1.51	1.41	
4,544.0	28.80	252.70	4,053.5	-447.6	-1,862.8	1,915.8	0.81	-0.77	
4,636.0	28.70	255.70	4,134.1	-459.6	-1,905.3	1,960.0	1.57	-0.11	
4,728.0	29.90	257.50	4,214.4	-470.0	-1,949.1	2,005.0	1.62	1.30	
4,819.0	28.30	257.10	4,293.9	-479.8	-1,992.3	2,049.2	1.77	-1.76	
4,911.0	30.20	257.50	4,374.1	-489.6	-2,036.2	2,094.2	2.08	2.07	
5,002.0	29.10	258.20	4,453.2	-499.1	-2,080.2	2,139.2	1.27	-1.21	
5,093.0	27.60	256.20	4,533.3	-508.7	-2,122.3	2,182.4	1.95	-1.65	
5,185.0	29.40	258.20	4,614.2	-518.4	-2,165.1	2,226.3	2.21	1.96	
5,276.0	28.60	258.50	4,693.8	-527.3	-2,208.3	2,270.3	0.89	-0.88	
5,368.0	30.20	256.60	4,773.9	-537.0	-2,252.4	2,315.5	2.01	1.74	
5,459.0	28.70	256.00	4,853.1	-547.6	-2,295.9	2,360.2	1.68	-1.65	
5,551.0	30.50	254.50	4,933.1	-559.2	-2,339.8	2,405.7	2.12	1.96	
5,643.0	28.70	255.30	5,013.1	-571.1	-2,383.7	2,451.1	2.00	-1.96	
5,734.0	30.20	255.30	5,092.4	-582.4	-2,426.9	2,495.8	1.65	1.65	
5,825.0	29.30	256.00	5,171.4	-593.6	-2,470.7	2,541.0	1.06	-0.99	
5,917.0	27.00	254.90	5,252.5	-604.5	-2,512.7	2,584.4	2.56	-2.50	
6,009.0	25.90	255.00	5,334.9	-615.1	-2,552.3	2,625.3	1.20	-1.20	
6,100.0	26.60	255.50	5,416.5	-625.4	-2,591.2	2,665.6	0.81	0.77	
6,192.0	26.90	253.90	5,498.6	-636.3	-2,631.1	2,707.0	0.85	0.33	
6,283.0	28.90	256.60	5,579.0	-647.1	-2,672.3	2,749.5	2.60	2.20	
6,375.0	29.80	255.00	5,659.2	-658.2	-2,716.0	2,794.6	1.30	0.98	
6,467.0	31.30	256.70	5,738.5	-669.6	-2,761.4	2,841.4	1.88	1.63	
6,559.0	30.20	256.80	5,817.5	-680.4	-2,807.1	2,888.4	1.20	-1.20	
6,650.0	28.60	256.00	5,896.8	-690.9	-2,850.6	2,933.1	1.81	-1.76	
6,742.0	31.20	256.00	5,976.6	-702.0	-2,895.1	2,978.9	2.83	2.83	
6,834.0	30.50	256.00	6,055.5	-713.4	-2,940.8	3,026.1	0.76	-0.76	
6,925.0	29.40	255.80	6,134.4	-724.5	-2,984.9	3,071.5	1.21	-1.21	
7,017.0	28.60	255.80	6,214.9	-735.4	-3,028.1	3,116.1	0.87	-0.87	
7,108.0	27.80	255.50	6,295.0	-746.1	-3,069.8	3,159.1	0.89	-0.88	
7,200.0	29.40	255.30	6,375.8	-757.2	-3,112.4	3,203.2	1.74	1.74	
7,291.0	28.10	254.60	6,455.6	-768.5	-3,154.7	3,246.9	1.48	-1.43	
7,383.0	27.10	255.00	6,537.1	-779.7	-3,195.8	3,289.5	1.11	-1.09	
7,474.0	26.90	254.60	6,618.2	-790.5	-3,235.7	3,330.8	0.30	-0.22	
7,566.0	23.70	258.20	6,701.4	-799.8	-3,273.9	3,370.1	3.86	-3.48	
7,658.0	21.00	259.90	6,786.5	-806.5	-3,308.2	3,405.1	3.02	-2.93	
7,749.0	18.10	258.90	6,872.2	-812.1	-3,338.1	3,435.5	3.21	-3.19	
7,841.0	17.00	258.20	6,959.9	-817.6	-3,365.3	3,463.2	1.22	-1.20	
7,932.0	14.60	256.30	7,047.5	-823.0	-3,389.5	3,488.0	2.70	-2.64	
8,024.0	11.60	256.30	7,137.1	-828.0	-3,409.7	3,508.8	3.26	-3.26	
8,115.0	9.70	257.70	7,226.5	-831.8	-3,426.1	3,525.6	2.11	-2.09	
8,206.0	7.30	256.30	7,316.5	-834.8	-3,439.2	3,539.1	2.65	-2.64	
8,298.0	5.70	253.90	7,407.9	-837.4	-3,449.3	3,549.5	1.76	-1.74	
8,389.0	4.30	254.20	7,498.6	-839.6	-3,456.9	3,557.4	1.54	-1.54	
8,481.0	2.40	260.40	7,590.4	-840.9	-3,462.1	3,562.8	2.10	-2.07	
8,572.0	2.30	251.90	7,681.3	-841.8	-3,465.8	3,566.5	0.40	-0.11	
8,664.0	1.60	214.60	7,773.3	-843.4	-3,468.2	3,569.3	1.54	-0.76	
8,755.0	0.30	274.10	7,864.3	-844.4	-3,469.2	3,570.5	1.62	-1.43	
8,847.0	0.40	290.60	7,956.3	-844.3	-3,469.7	3,571.0	0.15	0.11	
8,938.0	1.00	236.70	8,047.2	-844.6	-3,470.7	3,572.0	0.91	0.66	
9,030.0	0.50	19.30	8,139.2	-844.7	-3,471.2	3,572.5	1.55	-0.54	
9,121.0	0.30	232.20	8,230.2	-844.4	-3,471.3	3,572.5	0.85	-0.22	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603A-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Well:</b>	DW 8603A-33 (P28 496)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
9,213.0	0.70	223.20	8,322.2	-845.0	-3,471.9	3,573.2	0.44	0.43	
9,305.0	1.00	210.60	8,414.2	-846.1	-3,472.7	3,574.2	0.38	0.33	
9,396.0	1.30	225.60	8,505.2	-847.5	-3,473.8	3,575.7	0.46	0.33	
9,488.0	0.50	213.40	8,597.2	-848.6	-3,474.8	3,576.9	0.89	-0.87	
9,573.0	1.30	221.20	8,682.2	-849.6	-3,475.6	3,577.9	0.95	0.94	
9,665.0	1.00	48.60	8,774.2	-849.9	-3,475.7	3,578.1	2.49	-0.33	
9,757.0	0.80	77.70	8,866.2	-849.2	-3,474.5	3,576.7	0.53	-0.22	
9,848.0	0.50	90.30	8,957.2	-849.1	-3,473.4	3,575.7	0.36	-0.33	
9,940.0	0.50	157.20	9,049.2	-849.4	-3,472.9	3,575.3	0.60	0.00	
10,031.0	1.10	43.60	9,140.2	-849.2	-3,472.1	3,574.5	1.51	0.66	
10,123.0	0.80	9.50	9,232.1	-847.9	-3,471.4	3,573.5	0.68	-0.33	
10,214.0	0.10	280.40	9,323.1	-847.2	-3,471.4	3,573.3	0.88	-0.77	
10,306.0	0.00	70.60	9,415.1	-847.2	-3,471.5	3,573.4	0.11	-0.11	
10,398.0	0.80	301.70	9,507.1	-846.9	-3,472.0	3,573.8	0.87	0.87	
10,489.0	1.10	276.00	9,598.1	-846.5	-3,473.4	3,575.1	0.56	0.33	
10,581.0	1.00	344.80	9,690.1	-845.6	-3,474.5	3,575.9	1.29	-0.11	
10,672.0	1.20	25.10	9,781.1	-844.0	-3,474.3	3,575.3	0.86	0.22	
10,764.0	1.40	8.00	9,873.1	-842.0	-3,473.8	3,574.3	0.47	0.22	
10,855.0	0.30	225.60	9,964.1	-841.1	-3,473.8	3,574.1	1.81	-1.21	
10,947.0	1.30	243.90	10,056.1	-841.7	-3,474.9	3,575.3	1.11	1.09	
11,038.0	1.00	230.10	10,147.0	-842.6	-3,476.4	3,577.1	0.45	-0.33	
11,130.0	1.30	241.70	10,239.0	-843.7	-3,478.0	3,578.8	0.41	0.33	
11,221.0	1.40	240.40	10,330.0	-844.7	-3,479.8	3,580.9	0.11	0.11	
11,313.0	1.50	241.40	10,422.0	-845.8	-3,481.9	3,583.1	0.11	0.11	
11,405.0	2.20	240.20	10,513.9	-847.3	-3,484.5	3,586.0	0.76	0.76	
11,542.0	3.10	254.20	10,650.8	-849.6	-3,490.3	3,592.2	0.80	0.66	Last Cathedral Survey @ 11,542' MD
11,602.0	3.10	254.20	10,710.7	-850.5	-3,493.4	3,595.4	0.00	0.00	Projection to Bit @ 11,602'

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well DW 8603A-33 (P28 496)
<b>Project:</b>	Double Willow	<b>TVD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Site:</b>	S28-T4S-R96W (P28 496)(column pattern)	<b>MD Reference:</b>	KBE @ 7813.0ft (Patterson 308)
<b>Well:</b>	DW 8603A-33 (P28 496)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
DW 8603A-33 P28 496 -	0.00	0.00	7,494.0	-847.7	-3,473.6	1,678,386.19	2,246,178.70	39° 39' 55.64 N	108° 10' 41.08 W
- actual wellpath misses target center by 18.8ft at 8386.1ft MD (7495.6 TVD, -839.5 N, -3456.7 E)									
- Point									
DW 8603A-33 P28 496 I	0.00	0.00	10,513.0	-857.6	-3,490.6	1,678,376.73	2,246,161.42	39° 39' 55.54 N	108° 10' 41.29 W
- actual wellpath misses target center by 12.1ft at 11404.4ft MD (10513.3 TVD, -847.3 N, -3484.4 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
DW 8603A-33 P28 496 -	0.00	0.00	6,853.0	-847.7	-3,473.6	1,678,386.19	2,246,178.70	39° 39' 55.64 N	108° 10' 41.08 W
- actual wellpath misses target center by 139.2ft at 7772.9ft MD (6894.9 TVD, -813.5 N, -3345.3 E)									
- Point									
DW 8603A-33 P28 496 -	0.00	0.00	7,607.3	-847.7	-3,473.6	1,678,386.19	2,246,178.70	39° 39' 55.64 N	108° 10' 41.08 W
- actual wellpath misses target center by 12.7ft at 8498.4ft MD (7607.8 TVD, -841.0 N, -3462.9 E)									
- Point									
DW 8603A-33 P28 496 I	0.00	0.00	10,534.0	-857.6	-3,490.6	1,678,376.73	2,246,161.42	39° 39' 55.54 N	108° 10' 41.29 W
- actual wellpath misses target center by 11.3ft at 11425.5ft MD (10534.4 TVD, -847.7 N, -3485.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	Comment	
11,542.0	10,650.8	-849.6	-3,490.3	Last Cathedral Survey @ 11,542' MD	
11,602.0	10,710.7	-850.5	-3,493.4	Projection to Bit @ 11,602'	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_